UNITED STATES PATENT AND TRADEMARK OFFICE

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/844,672	04/30/2001	Radhika Thekkath	MTEC005/00US (0122.00US)	8987

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EXAMINER
GROSS, KENNETH A

ART UNIT	PAPER·NUMBER
2122	

DATE MAILED: 12/02/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE *3* MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.
- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1) ☐ Responsive to communication(s) filed on _____.

2a) ☐ This action is **FINAL**.   2b) ☒ This action is non-final.

3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4) ☒ Claim(s) *1-23* is/are pending in the application.

     4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5) ☐ Claim(s) _____ is/are allowed.

6) ☒ Claim(s) *1-23* is/are rejected.

7) ☐ Claim(s) _____ is/are objected to.

8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9) ☐ The specification is objected to by the Examiner.

10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.

     Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

     Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. §§ 119 and 120

12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

     a) ☐ All   b) ☐ Some *   c) ☐ None of:

         1. ☐ Certified copies of the priority documents have been received.

         2. ☐ Certified copies of the priority documents have been received in Application No. _____.

         3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

     * See the attached detailed Office action for a list of the certified copies not received.

13) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application) since a specific reference was included in the first sentence of the specification or in an Application Data Sheet. 37 CFR 1.78.

     a) ☐ The translation of the foreign language provisional application has been received.

14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121 since a specific reference was included in the first sentence of the specification or in an Application Data Sheet. 37 CFR 1.78.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)

2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)

3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) *4* .

4) ☐ Interview Summary (PTO-413) Paper No(s). _____ .

5) ☐ Notice of Informal Patent Application (PTO-152)

6) ☐ Other: _____ .

DETAILED ACTION

Claim Rejections - 35 USC § 112

1.   Claim 2 is rejected under 35 U.S.C. 112, second paragraph, as being indefinite for

failing to particularly point out and distinctly claim the subject matter which applicant

regards as the invention. Specifically, the acronym "FIFO" should be spelled out

completely at least once in the claims in order to clarify the definition. Also, what exactly

does FIFO represent? Is FIFO supposed to be a specialized stack, buffer, or pipeline?

Claim Rejections - 35 USC § 103

1.   The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all

obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set
> forth in section 102 of this title, if the differences between the subject matter sought to be patented and
> the prior art are such that the subject matter as a whole would have been obvious at the time the
> invention was made to a person having ordinary skill in the art to which said subject matter pertains.
> Patentability shall not be negatived by the manner in which the invention was made.

2.   Claim 1, 3-11, 13-15, and 17-23 are rejected under 35 U.S.C. 103(a) as being

unpatentable over Huang et al. (U.S. Patent Number 5,748,904) in view McCullough et

al. (U.S. Patent Number 6,615,371).

In regard to Claim 1, Huang teaches: (a) a plurality of compression modules that

receive data input, each of said plurality of compression modules being configured to

compress a piece of trace data to produce of compressed data (Figure 2, items 51-53, and

associated text); (b) a compression selected module coupled to said plurality of

compression modules, said compression selected module receiving pieces of compressed

data that are produced by said plurality of compression modules, said compression

selector module selecting the piece of compressed trace data that exhibits a desired level

of trace data compression (Figure 2, item 56, and Column 2, lines 1-10). Huang does not

teach that said data input is trace data. McCullough, however, does teach compressing

trace data to produce a piece of compressed trace data (Column 2, lines 24-31).

Therefore, it would have been obvious to one of ordinary skill in the art at the time of the

invention to build a system including a plurality of compression modules that receive

data input, each of said plurality of compression modules being configured to compress a

piece of trace data to produce of compressed data, and a compression selected module

coupled to said plurality of compression modules, said compression selected module

receiving pieces of compressed data that are produced by said plurality of compression

modules, said compression selector module selecting the piece of compressed trace data

that exhibits a desired level of trace data compression, as taught by Huang, where the

data is trace data, since this allows trace data to be transferred or stored in a smaller state.

In regard to Claim 3, Huang teaches a run-length encoding module (Figure 2, item

51, and associated text).

In regard to Claim 4, Huang does not teach that the compression selector module

selects one of said plurality of compression modules in accordance with a default

selection. McCullough, however, does teach allowing the computer system to

automatically chose a compression algorithm, hence a default algorithm (Column 3, lines

16-17). Therefore, it would have been obvious to one of ordinary skill in the art at the

time of the invention to build the system of Claim 1, where the compression selector

module selects one of said plurality of compression modules in accordance with a default

selection, as taught by McCullough, since this allows automatic compression without user intervention.

In regard to Claim 5, Huang teaches that the compression selector module signals a compression module that has been selected (Column 4, lines 63-67 and Column 5, lines 1-9).

In regard to Claim 6, Claim 6 is a computer product claim that corresponds directly with Claim 1, and Claim 6 is rejected for the same reasons as Claim 1, were Huang teaches a medium for the system of Claim 1. It would be obvious to use program code to control the function of the system of Claim 1, since the system of Claim 1 is a computer system, and program code is an inherent feature in a computer system for causing it to function in a specific way.

In regard to Claim 7, Claim 7 is a method Claim that corresponds with Claim 1, and is rejected for the same reasons as Claim 1, where it would be obvious to develop computer code for carrying out the function of the computer system taught in Claim 1, since program code is the way in which a system carries out a function, and where it would be further obvious to transmit this program code to the computer system, since the system will need to receive this code in order to use it on the computer system.

In regard to Claim 8, the examiner takes official notice that the Internet is a well-known medium for transferring computer code from computer systems located in different physical locations.

In regard to Claim 9, Claim 9 is a data signal claim that corresponds directly with Claim 7, and is rejected for the same reasons as Claim 7, where it would be obvious to embody a data signal on a transmission medium, since when transferring data between

computers, the information must comprise a electrical data signal in order for the computer to understand the information sent.

In regard to Claim 10, Huang teaches: (a) compressing a piece of data using a plurality of compression methods to produce a corresponding plurality of pieces of compressed data (Column 2, lines 3-6); (b) selecting one of said plurality of pieces of compressed data (Column 2, lines 6-9); (c) and outputting said selected piece of data (Column 2, lines 9-10). Huang does not teach that said data input is trace data. McCullough, however, does teach compressing trace data to produce a piece of compressed trace data (Column 2, lines 24-31). Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention to perform a method including compressing a piece of data using a plurality of compression methods to produce a corresponding plurality of pieces of compressed data, selecting one of said plurality of pieces of compressed data, and outputting said selected piece of data, as taught by Huang, where the data is trace data, since this allows trace data to be transferred or stored in a smaller state.

In regard to Claims 15, Claim 15 is a method Claim that corresponds to the system of Claim 1, and Claim 15 is rejected for the same reasons as Claim 1, where Huang teaches the method steps carried out by said system of Claim 1 (Column 6, lines 6-56).

In regard to Claims 11 and 17, the limitations of Claims 11 and 17 have already been addressed in the rejection of Claim 3, and Claims 11 and 17 are rejected for the same reasons as Claim 3.

In regard to Claims 13 and 18, the limitations of Claims 13 and 18 have already

been addressed in the rejection of Claim 4, and Claims 13 and 18 are rejected for the

same reasons as Claim 4.

In regard to Claims 14 and 19, the limitations of Claims 14 and 19 have already

been addressed in the rejection of Claim 5, and Claims 14 and 19 are rejected for the

same reasons as Claim 5.

In regard to Claim 20, Huang teaches: (a) a plurality of compression modules

(Figure 2, items 51-53) that retrieves input information, said input information including

a plurality of pieces of input data (Column 6, lines 10-13), each of said plurality of

compression modules being configured to receive said plurality of pieces of input data

and compress said plurality of pieces of input data to produce a corresponding plurality of

pieces of compressed data (Column 6, lines 17-48); (b) a compression selector module

coupled to said plurality of compression modules (Figure 2, item 56), wherein upon

receipt of a piece of compressed data from each of said plurality of compression modules,

said received pieces of compressed data corresponding to a single piece of input data,

said compression selector module selects the piece of compressed data that exhibits a

desired level of trace data compression (Column 2, lines 1-10). Huang does not teach that

the data is trace data, nor does he teach that the input trace information is in the form of a

stream. McCullough, however, does teach compressing trace data to produce a piece of

compressed trace data (Column 2, lines 24-31). McCullough further teaches receiving a

trace data input stream for compression (Column 2, lines 32-35). Therefore, it would

have been obvious to one of ordinary skill in the art at the time of the invention to build a

system including a plurality of compression modules and a compression selector module

described above, as taught by Huang, where the data is trace data, as taught by

McCullough, since this allows trace data to be transferred or stored in a smaller state, and

the input trace information is in the form of a stream, also taught by McCullough, since

this allows continuous transfer of data.

In regard to Claim 21, Huang teaches that selection by said compression selector

module is performed for compressed data generated for each piece of input data (Column

6, lines 30-32 and lines 48-49).

In regard to Claim 22, Huang teaches that the selection is performed

independently or compressed data generated for each piece of input data (Column 6, lines

30-32 and lines 48-49).

In regard to Claim 23, the limitations of Claim 23 have already been addressed in

the rejection of Claim 3, and Claim 23 is rejected for the same reasons as Claim 3.

3.   Claim 2 is rejected under 35 U.S.C. 103(a) as being unpatentable over Huang et

al. (U.S. Patent Number 5,748,904) in view McCullough et al. (U.S. Patent Number

6,615,371) and further in view of Miura et al. (U.S. Patent Number 5,625,785).

In regard to Claim 2, Huang and McCullough teach the system of Claim 1, and

Huang further teaches a buffer coupled to said compression selector module, said buffer

storing said selected piece of compressed trace data (Figure 2, item 57). Neither Huang

nor McCullough teach that the trace data is stored prior to transmission on a trace bus.

Miura, however, teaches a trace data bus configured to transfer trace data (Column 4,

lines 56-62). Therefore, it would have been obvious to one of ordinary skill in the art at

the time of the invention to build the system of Claim 1, as taught by Huang and

McCullough, further including a buffer coupled to said compression selector module,

said buffer storing said selected piece of compressed trace data, as taught by Huang, and

the trace data is stored prior to transmission on a trace bus, as taught by Miura, since this

allows the trace data to be transferred to another computer system, where the data can be

analyzed.

4.   Claims 12 and 16 are rejected under 35 U.S.C. 103(a) as being unpatentable over

Huang et al. (U.S. Patent Number 5,748,904) in view McCullough et al. (U.S. Patent

Number 6,615,371) and further in view of Lim (U.S. Patent Number 5,434,622).

In regard to Claim 12, Huang and McCullough teach the method of Claim 10, but

do not teach that selecting comprises identifying the piece of compressed data that has the

least number of bits. Lim, however, does teach compressing data with different

algorithms, and comparing the number of bits in each of the compressed resulting data,

and choosing the data with the least amount of bits (Column 3, lines 53-64). Therefore, it

would have been obvious to one of ordinary skill in the art at the time of the invention to

perform the method of Claim 10, as Huang and McCullough, where selecting comprises

identifying the piece of compressed data that has the least number of bits, as taught by

Lim, since smaller data is advantageous in storage and transmission purposes.

In regard to Claim 16, the limitations of Claim 16 have been addressed in the

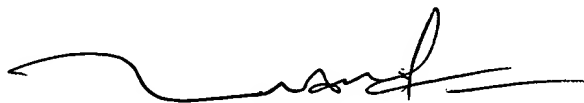rejection of Claim 12, and Claim 16 is rejected for the same reasons as Claim 12.

Conclusion

Any inquiry concerning this communication or earlier communications from the

examiner should be directed to Kenneth A Gross whose telephone number is (703) 305-

0542. The examiner can normally be reached on Mon-Fri 7:30-5.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's

supervisor, Tuan Q Dam can be reached on (703) 305-4552. The fax phone number for

the organization where this application or proceeding is assigned is (703) 746-7239.

Any inquiry of a general nature or relating to the status of this application or

proceeding should be directed to the receptionist whose telephone number is (703) 305-

3900.

TUAN DAM
SUPERVISORY PATENT EXAMINER

KAG